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## Harry Scott Smith, Biological Control: Riverside (1883-1957): University of California: In Memoriam, 1959

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## Harry Scott Smith, Biological Control: Riverside

1883-1957

Professor, Emeritus

Entomologist, Emeritus, in the Citrus Experiment Station

Harry Scott Smith died suddenly at his home in Riverside on Thanksgiving Day. He went the way he had expressed a desire to go--quickly, while still active and in full possession of his faculties. He is survived by his wife, Psyche Bruner Smith, three daughters, two sons, and ten grandchildren.

Harry Smith was born at Aurora, Nebraska, November 29, 1883. He was brought up as a farm boy and experienced all the rigors of life on a prairie farm in the latter part of the nineteenth century. The hours of work in the fields, from dawn to dusk, made an indelible impression. Admittedly, he escaped from "haying" and "tending hogs" by enrolling in the State University at Lincoln, where he worked his way by waiting on tables at fifteen cents an hour. There he was granted his A.B. degree in 1907 and his M.S. degree in 1908. Insects became his paramount interest when Professor Lawrence Bruner, State Entomologist, offered him a position as a laboratory instructor in entomology with the title of Assistant State Entomologist. Smith accepted the position and later married the Professor's elder daughter. Thus was launched a career which has had and will continue to have a profound influence in the fields of entomology and population ecology.

After a short period of service under Bruner, Professor Smith accepted an offer made by L. O. Howard, Chief of the Bureau of Entomology of the U.S. Department of Agriculture, and entered the Bureau with the title of Expert. His first assignment was a study of the parasites of the boll weevil in the southern states. This was followed by a study of the parasites and predators of the gypsy moth in the New England states. In 1912 Professor Smith was sent to Europe to obtain natural enemies of the destructive alfalfa weevil. Headquarters were established at Portici, Italy, in the laboratory of the world renowned entomologist, Filippo Silvestri, a leading exponent of biological control. This was the beginning of a lifelong friendship between the two men.

Professor Smith's work in the Bureau won the approval of L.O. Howard, and when A. J. Cook, California State Commissioner of Horticulture, sought the advice of Mr. Howard as to the best man to head the State Insectary at Sacramento, the latter recommended young Harry Smith. Mr. Cook's offer was accepted by him and on January 1, 1913, he became Superintendent of the State Insectary to head all the biological control work in California.

His appointment marked a turning point in biological control affairs in California, for up to this time Mr. Howard had been increasingly critical of certain biological control procedures as practiced by the State Commission of Horticulture, and in 1912 had seriously considered using his authority to prohibit the State of California from importing beneficial insects. The matters of contention between the federal and state officials were quickly settled by Harry Smith, and the fullest cooperation ensued. Professor Smith promptly abandoned as scientifically unsound the indiscriminate distribution of both native and introduced beneficial insects, and reinstituted the search for beneficial insects in foreign countries.

Although an ardent advocate of biological control, he recognized its limitations and decided that the pests most amenable to this form of control should be attacked first. After a statewide survey of the situation, he concluded that the most promising activity would be that against mealy bug and scale pests of citrus. Outstanding were his campaigns against the citrophilus mealy bug, citrus mealy bug, and the black scale. Today, the black scale in California is relatively unimportant in comparison with its status prior to the introduction after 1918 of parasites under Professor Smith's direction. The complete control of the citrophilus mealy bug by the introduction of parasites from Australia in 1928 is an achievement in biological control that ranks second only to the control of cottony-cushion scale by *Vedalia* in 1889-1890.

In 1919 Professor Smith was made Chief of the Bureau of Pest Control in the newly organized California State Department of Agriculture. Soon thereafter, entomological research was separated from the police and regulatory functions of the Department of Agriculture and transferred to the College of Agriculture of the University of California. In 1923 he was offered a position as Associate Professor in the University to head the

beneficial insect investigations. As this field was his first love, he eagerly accepted the offer. He remained with the University for twenty-eight years, until his retirement in June, 1951.

Under his direction, the biological control group in the University steadily increased in size and in the scope of its activities. Today, projects in the Department cover problems affecting practically all the agricultural industries in California.

An important milestone in biological control in California was reached when Professor Smith obtained an authorization from the federal government to import plant-feeding insects to control noxious weeds. This authorization amounted to a vote of confidence in the soundness of Professor Smith's judgment and in his reliability. The first weed-control project in the United States, the control of the Klamath weed by the introduction of its enemies from Australia, proved an outstanding success. Within the Department of Biological Control, Professor Smith established the Laboratory of Insect Pathology, headed by Dr. E. A. Steinhaus. This was the first of its kind in the United States to engage in the microbial control of insect pests. All of these activities have brought great benefit to California agriculture and world-wide recognition to the University.

Professor Smith's success as a leader and scientist lay in a rare combination of wisdom and personal qualities, a keen grasp of his field, and an uncanny ability to anticipate and plan for eventualities. He possessed a versatility which enabled him to handle problems not specifically related to his own field. This is evidenced by the success in averting a threatened embargo on California agricultural products by other states in retaliation for what they considered unreasonable and discriminatory quarantine regulations. A bulletin issued in 1933 under Professor Smith's chairmanship and entitled *The Efficacy and Economic Effects of Plant Quarantines in California*, settled the matter to the satisfaction of all concerned. This bulletin was translated into several foreign languages and today is regarded as a standard treatise on the subject.

Professor Smith's presidential address to the American Association of Economic Entomologists in 1940 anticipated by a full ten years the problem of arthropod resistance to insecticides, which today threatens disaster in the fields of agricultural and public health entomology. His studies were not all of an applied nature: his basic investigations and publications in insect population dynamics are classics in the field of population ecology.

During his lifetime Professor Smith received many honors, including the honorary degree of Doctor of Science from the University of Nebraska. He was President of the American Association of Economic Entomologists, as well as of the Pacific Slope Branch of this organization; President of the California Entomological Club; delegate of the University of California to the International Entomological Congress, Ithaca, New York (1928); delegate of the National Research

Council to the Pacific Science Congress in Vancouver (1933) and in New Zealand (1949); Fellow in the American Association for the Advancement of Science; member of the Pacific Science Board's Invertebrate Consultants Committee for Micronesia; honorary member of the Hawaiian Entomological Society; member of Sigma Xi and of Delta Tau Delta; and was elected to honorary life membership in the Entomological Society of America in 1957.

"Prof Harry," as he was affectionately known to his colleagues and many friends, will long be remembered with deepest respect for his professional attainments and with an admiration amounting almost to reverence for his warm personal qualities, his never-failing kindness, and genuine humility. Generations to follow will know him for his theoretical studies on the fundamental principles of biological control.

A. M. Boyce H. Compere R. van den Bosch